# Note on Diagonal Method

Scrappy, grotesquely incomplete version

Zero Philosophy
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**§00** — Diagonalization is distinctively modern. Its most prominent occasions are all historically late, concentrated especially in the epoch of high modernism. Cantor is the generally acknowledged master of the diagonal. In its self-reflexive, explicitly thematized and formalized instance, it is an innovation belonging to the last decades of the 19th century. Yet if its inception can be advanced by another hundred years, to be brought into coincidence with the emergence of the critical philosophy, and then – in continued entanglement with the critical impulse – still further back into the 18th century, or even before, this does nothing to detract from the distinctive modernism of the method. To the extent that diagonalization can be drawn back through time, Modernity can too. It might be concluded, eventually, that to modernize is to diagonalize.

**§01** — The most lucid initiatory example of diagonal production within philosophy is provided by the Kantian synthetic *a priori*, the thought of transcendental critique. 'Synthetic *a priori*' is a term in two parts, each of which refers to an established conceptual binary distinction. The innovated term is thus, intrinsically, a crossing, through double pairs. This is the minimal formal complexity for a philosophical diagonal. It supplies our basic model here.

**§02** — The *transcendental*, critically understood, is itself a diagonal concept. The most economical demonstration is provided by an *exploded formulation* – necessarily a regression – which captures its genesis with a maximum of illustrative crudity. In the twin pairings or double-twinning of the transcendent-immanent couple with that of theory-fact, alignment is fixed with greatest philosophical solemnity by Plato. Essential transcendence of the theoretical is implicit to the Idea. Thought is delivered to the given from beyond.

**§03** — In the wider public order of conception, the Platonic legacy is more desolating than anything found explicitly in the Platonic text. Over many centuries, contending rational and empirical schools resolve the general scheme, through argumentative trade-offs. Transcendent theory provides necessity without content, while immanent fact provides content without necessity. Empty formalism is contrasted with formless substance, from both sides. Rigor can be traded away for relevance, or inversely. This is the essence of the pre-critical situation.

**§04** — Kant opens the critical or transcendental philosophy on the diagonal of *immanent transfactuality*, or that which *exceeds fact objectively*. The critical 'Copernican revolution' is a

revolution because, within the pre-critical order, any such term is definitely, if tacitly, foreclosed. Nothing of the kind had previously been conceived because it appears, *obviously*, to involve intrinsic contradiction. Is not anything beyond fact determined as transcendent *by definition*?

**§05** — It is always the prevailing, weakly formalized, logical order that explains why diagonal concepts are initially formulated as bipartite terms that can only appear – at their threshold of emergence – as paradoxical. (They are always finally *pseudo-paradoxical*.) Optimally, over time, these terms are consolidated, and even fully compacted, communicating the integrity of the diagonal line. *Synthetic a priori* is by now a term deemed scarcely more dissociable than is *a priori* alone. We will come to more fortunate examples still.

**§06** — The *explicit* sign of a diagonalization, then, is an initially bi-partite technical term that retains an internal tension suggestive of paradox, or internal contradiction. These terms are bi-partite because diagonal method does not begin with a single conceptual opposition, but with a pair of such oppositions, previously glued together as apparently matched (quasi-)synonyms. It supposes *resonant distinctions*, of obvious, or actually unquestioned, alignment.

**§07** — During the diagonal process, the terms involved are first adopted in parallel, then twisted into the perpendicular, and finally inclined to the oblique. The procedure, fully expanded, unglues or peels apart some quasi-synonymous distinction, before implicitly or explicitly tabulating it to a matrix, cross-linking it, identifying the diagonal, and then pursuing the positive trend. Thus, diagonalization has successive *parallel*, *orthogonal*, and *diagonal* phases. The first is dominated by resonance or redundancy, the second by combination or permutation, and the third by optimization.

**§08** — Diagonalization is executed within a matrix, or exhaustive combinatorial array (with as many dimensions as there are elements in the assemblages to be composed, or sets to be enumerated). Since any higher poly-dimensional diagonalization is always decomposable into a sequence of two-dimensional diagonalizations, there is never strict philosophical need to undertake one.

**§10** — Classical critique advances a diagonal line that is strikingly asymmetric. It indicates that traditional conceptuality has been blind *in one direction*. This observation translates into a question. What happens to the analytic *a posteriori* and its structural analogs? Kant offers them no consideration.

**§11** — To speak loosely, the *a priori* and *a posteriori* are time-signatures for procedures that are *facile* and *arduous*, respectively. Still respectively – which is to say *resonantly* – their results are pre-critically assumed to be *trivial* (analytic) and *substantial* (synthetic). There is an economic consistency to their assumed distribution. Roughly, *you get what you pay for* (through trade-offs).

In this regard, the synthetic *a priori* yields a premium, or surplus value. It promises the acquisition of epistemological value with abnormal economy. Substantial knowledge is made facile through it.

**§12** — The analytic *a posteriori*, in radical contrast, offers only expensive triviality. It is the way gains of no substantial value might be arduously achieved. Thus it could be asked reasonably, and sensibly, what imaginable interest could there be in this? As already noted, Kant exhibited none, understandably.

These are bad diagonal trends, or more loosely *bad diagonals*. Yet, on occasion, this very characteristic can be a conceptual resource. We will curve back later towards its usage.

**§13** — The bad diagonal points into mystery, or transcendent contingency, at once arbitrary and beyond reach. Religion at its worst – when judged according to the criterion of epistemic economy – populates the quadrant. Mysteries thus (diagonally) defined are thoughts we cannot have, and also have no need for. The critical philosophy rigorously orients itself away from them. Nothing of value is missed.

**§20** — Since the late 18th century, the contour of the thing-in-itself has been diagonally crafted to an ever-unprecedented degree of refinement, and yet, still, that is what it is, and nothing else. The boundary of the unknown, and unknowable, is itself the object of an increasingly exact cartography. Setting and re-setting this limit is the original and eternal meaning of critique. Only through diagonal method is it realized.

**§21** — When *matter* is liberated from its pre-critical conception, *diagonal materialism* becomes a redundant formulation (or pleonasm), in which each term fully reconstructs the positive sense of the other. Approached from the inverse, ideality undergoes diagonal subversion. Time escapes assimilation to the idea.

**§22** — Within the techno-cultural main current, by the final century of the previous millennium, the 'phenomenon' of critical philosophy has come to be conceived as the algorithmically determinable. Its occult complement, the diagonal noumenon, is then re-articulated as the *uncountable*, the *uncompletable*, and the *uncomputable*.

**§23** — Rather than being merely postulated, the reality of the sub-phenomenal shadow realm or thing-in-itself is *demonstrated*, through a series of powerful diagonal arguments. Its signature is an ontological surplus, beyond the reach of some definite rigorous procedure (and thus uncountable, incompletable, and uncomputable). Phenomenalization crashes against it indicatively. Diagonal argument is that which makes such a crash an indication. It is analogous to a particle collider designed for transcendental or fundamental-ontological revelation. Cantor,

Gödel, and Turing build such conceptual machines in succession, and in doing so consummate theoretical modernity. The basic orientation of critical intelligence is through them definitively installed.

**§24** — Cantor's diagonal is a line of coordination, passing consistently through the *n*th place of the *n*th number. His diagonalization matrix is transfinite on both axes. It is thus essentially virtual, procedurally inaccessible to full actualization (even though actual infinity is its topic). Diagonalizing between two axes of countable infinity projects an uncountable infinity, making an *inaccessible discovery*.

**§25** — There is a Möbian quality to Cantor's diagonal. It passes smoothly between inside and outside. The infinities of the number and of numbers are interlaced. Each of the great techno-modernistic diagonals has this characteristic. The number (or program) maps or matches the entire set of numbers (or programs). The outside is cycled through the inside, in a way that is essentially reflexive. The importance of this characteristic will be returned to, as cybernetics intensifies.

**§26** — Gödel makes of the number also a statement that is, by necessity, no smaller in scope than the whole of arithmetic, insofar as arithmetic, as a whole, is considered thinkable. That arithmetic as a whole can then only – and explicitly – cease being thinkable is the diagonal outcome, or demonstration.

**§30** — 'Orthogonality' is two dimensional. Its philosophical meaning is exactly the independence of these dimensions. By emphasizing this separation, *orthogonalism* understands itself as a resolution of confusion. Rather than one axis there are two, with free conceptual variation upon each. In order to consolidate this articulation, it identifies the dispelled confusion as a fallacy. Hence the 'Naturalistic fallacy' or supposed mistaking of values for matters of fact.

**§31** — Upon diagonal reconstruction, it is not the 'fallacy' but rather the supposition of the fallacy which is found to be in error. That is to say, the orthogonal presupposition is withdrawn. Instead of independence and free variation of terms, the diagonal preserves reciprocal irreducibility only under conditions of mutual implication. Values do not reduce to facts, or inversely, because neither reduces even to itself. In the fashion of metaphysics, orthogonalism is essentially erroneous.

**§32** — Since it is articulated in two dimensions, orthogonalism can only be initially affirmed, or engaged, upon a plane. Within – and also without – such terms of engagement, the diagonal is a *planar line*. It is neither one-dimensional, nor two-dimensional, but inter-dimensional. A diagonal draws a plane into a line, in a process without terminus. Between diagonal thing and

diagonalizing action there is no resilient distinction. The diagonal necessarily and continuously diagonalizes.

**§40** — Much, if not most, of the conceptual articulacy offering itself to diagonalization is mined from the nature-culture seam of sensory-motor bivalence. The neurological distinction between afferent and efferent systems divides what is perceived to be from what should be done. Its resonances continue through the distinction of stimulus-behavior / fact-value / is-ought / sentience-agency / perception-action / theoretical-practical / descriptive-normative / receptive-creative / and ontology-ethics, among innumerable others.

**§41** — The logical framing of such terms does not simply align with their cybernetic framing. In the latter, they have not merely conceptual distinction, but also *circuitous complementarity*. Neurological evolution has balanced them. Neither phylogenetically nor ontogenetically do they exhibit mutual dynamic independence. Rather, each is functionally matched to the other. As much is sensed as makes sense to any given capacity to behave. Behavior is specified to a level supported by the precision of sensation. Doing and knowing are tuned to each other, prior to any articulation of their independence.

**§42** — Circuits are diagonal. Whether negatively or positively inclined, a circuit instantiates the self-reference formally expressed as paradox. In each case it guides behavior neither to one pole, or the other, but always between. It can therefore be said, without need of qualification, that *cybernetics occupies the diagonal*. Naturally, the mode and consequences of this occupation varies with the circuitry in question.

**§43** — In mechanics, as in philosophy, diagonal engineering involves only self-referential systems. It, too, loops the outside through the inside, producing automatism. Machinery becomes cybernetic through sensitization to the consequences of its 'own' behavior. It thus coincides with self-assembly. …

**§44** — The conceptual plane of the elementary *governor* is set by the cross-coupling of stasis-dynamism, and cooling-heating. The 'pre-critical' resonance between these pairs is vividly exhibited by the (thermo-dynamic) ambivalence of *freezing*, which – via hydraulic analogy – locks the negative of heat together with arrested flow.

**§45** — The protocol for translation from logical paralysis to mechanical meta-stability dates back to Gregory Bateson. It boots up from the recognition that the Cretan paradox formalizes a control loop (or bi-pole dynamic compensator) at its limit of abstraction. 'This sentence is a lie' if true is a lie, and if a lie is true. It thus exactly analogizes the homeostat: 'If hot then (go to) cold, if cold then (go to) hot'. Here, too, is pseudo-paradox. 'Contradiction' is mechanically dynamized as stabilization within a negative control loop, or as escape momentum in a positive one.

**§46** — The cybernetic device does not attain equilibrium through transition from a false to a true state. Its mode of finality is not typified by the completion of a logical operation. Rather, it introduces *diagonal equilibrium*. It is by instantiating this that the *escape momentum* of formally simple positive feedback circuitry shares a template with the *spontaneous order* of dynamic (capitalistic) societies.

**§47** — Control engineering finds its ultimate target in the cryo-dynamic diagonal, the reciprocal (or bad diagonal inversion) of which is already evident in the classical conception of *heat-death*. Future tech runs cold, and the colder it runs the more futuristic it is. Superconductivity typifies it. Nothing dates technology more than friction.

**§50** — Within 20th century philosophy, the combined work of Gilles Deleuze and Félix Guattari has been an especially self-conscious site of diagonal production. This is most schematically evident in its critique of structuralism, which draws the diagonalization matrix of form-substance / expression-content with impeccable classicism. In this case, the alignment of form and expression, substance and content, is the relevant order of resonance or redundancy. There is indeed a 'poststructuralist' disruption delivered by Deleuze & Guattari, and it is exemplified by the twin pseudo-paradoxes *substances of expression* and *forms of content*.

**§51** — Intensities (heterogeneous quantities) are diagonals. … transcendental empiricism … real virtuality … real abstraction … (teleo-mechanical) 'desiring machines' …

Theoretical completeness requires some minimal enumeration of the bad diagonals in Deleuze & Guattari. Candidate might include homogeneous qualities, actual and concrete unrealities … a-telic organisms …

**§60** — The classical term 'political economy' is already marked by diagonal orientation. In it, the order of the city and the household are conjoined. The tacit topic, then, is scalar range, or macrosocial-microsocial relations. …

**§61** — Karl Popper's self-protective *liberal intolerance* embraces its own pseudo-paradoxical character. For liberalism ("the open society") to survive, Popper argues, it needs to know and to ward off its enemies. The resonant stack of liberalism-illiberalism and tolerance-intolerance is in this way subjected to deliberate diagonal disturbance. …

**§62** — Within economics, more narrowly conceived, the most notorious diagonal is bad. Stagflation is found, predictably, when an established order of trade-offs break down. This philosophical structure identifies it as the clearest critical signal ever encountered within economic history. It emerges through diagonalization of the inflation-deflation / employment-unemployment matrix, when the order of trade-offs intrinsic to the Phillips Curve breaks down.

Macroeconomic phase-change occurred at the point where acceptance of increased inflation for reduced unemployment, or increased unemployment for reduced inflation, became vividly non-viable. Consequent migration of monetary policy to the diagonal inaugurated the epoch of neoliberalism. …

**§63** — In the sphere of socio-economics, or political economy, diagonalism is manifested with overwhelming prevalence by the concept of decentralized (or 'spontaneous') order. This is generated by diagonalization of the centralization-decentralization / order-disorder matrix, in the fashion of the Scottish Enlightenment. …

**§64** — Diagonalization excretes a pessimal concentrate. The inverse of spontaneous or decentralized order – i.e. centralized disorder – is most widely known through the coinage of Samuel Francis as *anarcho-tyranny*. In this case, as in any formula of the same type, the outcome marked is *surprisingly* terrible, which is to say, worse than anything that had been easily thought possible. Anarcho-tyranny is applied to a social situation for which nothing better than the double downside slot of the diagonalization matrix is found adequately descriptive. When a disaster occurs with such cross-dimensional extremity that it appears to defy logic, a bad diagonal provides the key to it. Political history is the obvious hunting-ground for such misfortunes.

**§65** — Diagonalization disrupts the articulation of trade-offs. In the most generic case, the spectrum of oppressive-permissive government is pre-aligned with the spectrum of order-chaos. Broadly 'conservative' and 'liberal' socio-political positioning is understood as the acceptance of oppression for a reduction of chaos, or of chaos for a reduction of oppression, respectively. Geocultural patterns of regime preference – such as differences in state-society relations of characteristically East Asian and Western types – are evaluated similarly. Politics as 'the art of compromise' locates itself within some such pre-critical conceptual space.

**§66** — The much-memed four-quadrant 'political compass' is strikingly isomorphic with a diagonalization matrix. It is structured by orthogonal left-right / authoritarian-libertarian axes. What it lacks, perhaps through strategic decision, is the residue of resonant parallelism between these axes, such that two of the four combinations (or quadrants) would be charged with apparent paradox, of optimal and pessimal type. There is, in consequence, no inclination to the diagonal. An uncharged combinatorial array, without residual resonance between its polarities, can be considered a *degenerate diagonalization matrix*. Such structures, when recognized as such, invite re-animation. Reconstruction of their descent is required to renew their conceptual impetus.

**§67** — In the case of the political compass, regeneration begins with the Rothbardian claim that libertarianism (or radical liberalism) is the true left. It is only necessary to trace left-right

political articulation to its origin in the French National Assembly of the late 18th century to restore the pre-critical order of resonances, from which Rothbard drew his evaluation. Political variation is distributed on a spectrum from monarchical authority to its alternative. What will later become the combinatorial product 'authoritarian right' is at this initial stage *only what 'right' is generally agreed to mean*. Reciprocally, the left has intrinsic anarchistic association. The sense it conveys to established authority is necessarily sinister. Evidently, the 'political compass' is not built from freely permutated orthogonal axes. There is rather an approximation to strict logical coincidence, or co-polarized (resonant) parallelism, only recently, and crudely, obscured. Under such coaxing, the word 'liberal' in its American usage – otherwise so perverse – recovers its sense as leftward political inclination in general.

**§68** — Within modern political history, normalization of the authoritarian left has obscured its bad diagonal characteristics. Prolonged exposure made it seem – even to its enemies – only ordinarily terrible, rather than bizarrely or almost unthinkably terrible, which is to say terrible to the point of philosophical wonderment. 'Actually existing' leftism has been a disaster of such peculiar extremity that methodical procedure is required to conceptualize it. Following this diagonal re-assembly, 'left-authoritarian' is found to echo anarcho-tyranny, as the pessimal reflection of spontaneous order.

**§69** — To recapitulate, the critical inadequacies of three distinct models of ideological articulation are exposed through diagonal demonstration. Single axis right-left spectra, whether of the early modern (monarchy-anarchy) or late modern (conservative-liberal) type, block the diagonal with resonance, or twinned pseudo-tautology. The twin-axis quadrate (or 'political compass') that seeks – self-consciously – to restore the diagonal (under right-libertarian inspiration), in fact fails in this task due to ideological amnesia or 'orthogonal degeneration'.

## 7 Comments

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**Zero Philosophy** Sep 26, 2021 Author

Origin of quantum mechanics in diagonal method, from Carlo Rovelli's Helgoland:

"Heisenberg's idea is to write all the quantities which describe the movement of the electron -- position, velocity, energy -- no longer as numbers, but as tables of numbers. Instead of having a single position x for the electron, we have an entire table of possible positions X: one for every possible leap. ..."

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**Trey McMullen** Sep 26, 2021

Wondering if eastern countries would have arrived at a Wu Xing inspired pentamorphic compass.

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